

Thoughts about horses off trail in the West TSA.

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Overarching goal: To provide sustainable, economically feasible 'passive recreation' use of public lands while concurrently preserving the conservation and ecological service values of the area.

General comments about OSMMP use and management costs.

The cost of a visit differs among hikers, dog-walkers, and horse users. All users carry a trail management cost. Invasive species management costs increase on a per capita basis with both dogs and horses. This is due to the nitrogen fertilization effect from urine and feces which, as we know, 'grow weeds'. In addition, horses may bring a seed dispersal factor that could add additional invasive plant management costs (Wells and Lauenroth 2007). Parking lot construction, maintenance and trash removal costs are smallest on a per capita basis for hikers, increased for dog-walkers given the need for dog feces disposal, and potentially largest for the horse users, whose parking space demands are several fold higher than other users, and whose trailers have a much higher probability of adding seeds at trailhead sites than do other vehicles.

Erosion Damage of off-trail use.

Off-trail closures to horses during periods when soil moisture are at or near field capacity would likely substantially reduce impacts. That one trip through a wet soil by a ~800-1000 lb horse + rider leaves a pretty nasty mark. This damage is perhaps no worse than that imposed by recent elk activity (i.e., large numbers of elk), but it can add to it. *Off-trail use needs to remain light at best to be viewed as sustainable.*

A first order approximation has a cow and a horse+rider at about equal weight. The idea that "horses can go where cows are allowed" is a fairly logical one, and horse use on lands leased or maintained as cow pastures would seem to be a reasonable argument. Wildlife likely 'see' a horse+rider as something different from a cow, however, so seasonal closures for nesting species remains logical.

The plant invasion threat

Seed dispersal of non-native plant species in the feces of horses off trail represents a risk above and beyond risks from hikers (Wells and Lauenroth 2007). With on-trail use, monitoring can provide early detection and eradication of any germinating seeds dispersed in this manner. However, one cannot effectively monitor off-trail use, so that invasive species could have time to establish and become a much larger ecological or economic threat than would otherwise occur. This has been one of the consequences of horse use of the federal wilderness areas, and is a logical scenario on OSMMP.

Can this problem be mitigated in a cost-effective way? In Colorado we require mandatory boat inspections to prevent invasions of unacceptable species in lakes and reservoirs. This March the USFS inspected (and in some cases washed) equipment before it was allowed to go onto their

lands to assist in fire mitigation efforts. Consistent with these activities and given that horses are potential weed spreaders, perhaps we should consider a horse enema station at trailheads? Just kidding...How about an agreement with horse owners to provide their animals with weed-free forage for an appropriate time period prior to use on OSMP?

OSMP already has a large monitoring burden, but any reinstated or expanded off-trail use by horses needs to be included in the monitoring program, and the management costs as well as the risks to conservation values and impacts on other users need to be periodically re-assessed with respect to the benefits provided to those who enjoy horse riding on City lands.

Literature cited

Wells, F.H. and W.K. Lauenroth. 2007. The Potential for Horses to Disperse Alien Plants Along Recreational Trails. *Rangeland Ecology & Management* 60(6):574-577.

Key finding from Wells and Lauenroth:

“ We sampled horse dung along the first 4 000 m of the Lower Piney River trail in the White River Forest of western Colorado. We evaluated the seed content of each sample by applying standard methods for soil seed bank analysis. We found 20 species and 564 seedlings. Twelve of the species were graminoids, 6 were forbs, 1 was a shrub, and 1 was a tree. The species were evenly divided between natives and aliens, but 85% of the seedlings were aliens. An average of 47 seedlings emerged per sample, but the range was from 4 to 192. Our results make it clear that horses, and very likely all pack stock used on recreational trails, represent a potentially important dispersal vector for alien plants into western wildlands.”